



# Configuration Guide

Cisco

340 Access Point

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## Introduction

This document details the specifications for configuring the Cisco 340 series access point (AP) with SpectraLink 8000 Wireless Telephones.

## Product Summary

Manufacturer:	Cisco	
Approved product(s) :	Cisco 340	
RF technology:	Direct-sequence spread spectrum (DS), 2.4 GHz	
AP software version:	11.10T, 12.01T1 †	
SpectraLink handset models:	e340/h340/i640	8020/8030
SpectraLink radio mode:	802.11b	802.11b
Maximum telephone calls per AP:	4 *	4 *
AP configuration parameters:	See <i>Access Point Configuration</i> below	
Indoor range (typical):	See vendor specifications for AP	
Required network topology:	Switched Ethernet	
Network constraints:	Dedicated segment for wireless, single subnet	
WEP capability:	Yes *	
ESSID auto-learn function:	Yes *	

† Earlier and later software versions have not been tested for the SpectraLink 8000 SVP Server compliance, except as noted. Refer to *Polycom WLAN Compatibility Table* for Field Verified AP software versions.

\* Telephone calls per AP must be configured in the system per documentation provided by Polycom. WEP and Automatic Learn are programmed into each handset in addition to being configured in the AP.

## SpectraLink 8000 Wireless Telephones

SpectraLink 8000 Wireless Telephones use voice over IP (VoIP) technology on IEEE 802.11b-compatible wireless local area networks (WLANs). Access points utilize radio frequencies to transmit signals to and from the SpectraLink 8000 Wireless Telephones.

# Access Point Capacity and Positioning

Each site is unique in its AP requirements. Please take the following points into account when determining how many APs are needed and where they should be placed in the facility.

## Handset range

There must be wireless LAN coverage wherever SpectraLink 8000 Wireless Telephones will be used. The typical range for a SpectraLink 8000 Wireless Telephone is comparable to that of a laptop computer utilizing a wireless LAN PC card. However, SpectraLink 8000 Wireless Telephones are likely to be used in areas where data devices are not typically used, such as stairwells and outdoor areas. SpectraLink 8000 Wireless Telephones have a Site Survey mode that displays dBm levels to determine adequate WLAN coverage. Refer to the Administration Guide for your SpectraLink Wireless Telephones for details about this feature.

## Number of handsets per access point

Estimate the number of SpectraLink 8000 Wireless Telephones and their anticipated call volume per AP area to ensure that the maximum number of calls per AP will not be exceeded. In this estimate, consider the data rates at which the handsets will operate. Higher data rates can only be sustained while well within the range of the AP. If the SpectraLink 8000 Wireless Telephones will be operating near the limits of the RF coverage from the AP, they will automatically drop to 1 Mb/s operation. SpectraLink 8000 Wireless Telephones require approximately 15% of the available bandwidth per call for 1 Mb/s operation, approximately 10% of the available bandwidth per call for 2 Mb/s operation, approximately 7% of the available bandwidth per call for 5.5 Mb/s operation, and approximately 5% of the available bandwidth per call for 11 Mb/s operation.



The maximum number of telephone calls per AP quoted in the summary table above is based on 11 Mb/s operation, and will be reduced if some or all SpectraLink 8000 Wireless Telephones are operating at 1, 2, or 5.5 Mb/s.

## LAN bandwidth

Estimate anticipated peak call volume to ensure that the LAN has enough bandwidth available to handle the network traffic generated by all of the wireless devices. Network traffic can be monitored/analyzed using a network sniffer or a simple network management protocol (SNMP) workstation.

## Number of other wireless devices per AP

The SpectraLink 8000 Wireless Telephones share bandwidth with other wireless devices. To ensure adequate RF bandwidth availability, consider the number of wireless data devices in use per AP.

## Notes on Configuration



The AP must support SpectraLink Voice Priority (SVP). Contact your AP vendor if you need to upgrade the AP software.

If you encounter difficulties or have questions regarding the configuration process, please contact the Customer Support Hotline at (800) 775-5330. The hotline is open Monday through Friday, 6 a.m. to 6 p.m. Mountain time.

# Access Point Configuration

1. Connect to the AP.
2. If the AP is already in use, note the IP address, subnet mask, default gateway, and WEP settings:
  - a. From the main menu select **Setup > Ethernet > Identification** to display or modify current settings for IP address, subnet mask, or default gateway.
  - b. From the main menu select **Setup > AP Radio > Hardware** to display or modify current settings for ESSID and frequency.
  - c. From the main menu select **Setup> Security > Radio Data Encryption (WEP) > Accept Authentication Types** to display or modify current settings for encryption.
3. If allowable, set the AP configuration parameters to the default values:



If you are concerned whether default values will affect any operation of your existing WLAN please consult SpectraLink Customer Support for specific field default values that we recommend.

- a. From the main menu select **Setup > Ethernet > Advanced >Restore Defaults**.
  - b. From the main menu select **Setup > AP Radio > Advanced >Restore Defaults**.
4. If 2 Mb/s support is desired:
    - a. Navigate to **Data Rates: 2.0**.
    - b. Change value to **basic**.
  5. Navigate to the appropriate menu and enter the IP addressing, subnet mask, default gateway, ESSID, and frequency information.



It is recommended that the AP allow the broadcast of ESSIDs to simplify the configuration of SpectraLink 8000 Wireless Telephones. SpectraLink terms this function Automatic Learn. If there are overlapping WLAN areas at your site, the Automatic Learn function may not work properly in the areas that receive signals from two or more APs.

Sites with heightened security issues may not want ESSID broadcast enabled. If it is not enabled, the ESSID must be programmed into every handset.

6. By default, WEP (Wired Equivalency Privacy) is off. If WEP is desired, obtain the key values from the local administrator of the wireless LAN and use the AP vendor documents for guidance in programming the encryption settings.



Note the WEP settings. The handsets require configuration with identical settings.

7. Navigate to **AP Radio > Hardware**.

The following table shows additional settings:

Hardware Parameter	Setting	Criticality
Allow broadcast SSID to associate?	Yes	Recommended
Data rates: 1.0	Basic	Required
2.0	Any	Required
5.5	Yes or no	Required
11.0	Yes or no	Required
Transmit power	30 mW	Recommended
Fragmentation threshold	584 or higher	Required
Beacon period (Kusec)	100	Recommended
Data beacon rate (DTIM)	2	Recommended
Receive antenna	Diversity	Recommended
Transmit antenna	Diversity	Recommended

8. After these parameters have been set, click **Apply** to accept these settings.
9. Return to the **Setup** menu and select **Advanced** to the right of the **AP Radio** section at the bottom of the screen. It is recommended that the **Use Aironet Extensions** parameter be set to **No**.
10. Return to the **Setup** menu and select **Advanced** to the right of the **AP Radio** section at the bottom of the screen. It is recommended that the **Change Radio Preamble** parameter be changed to **Long**.
11. The Cisco 340 Access Point has SpectraLink Voice Priority (SVP) active at all times. There is no parameter to enable or disable.
12. Restart the AP.

The AP is now ready for use with SpectraLink 8000 Wireless Telephones.